**Supporting documents**

**Muffle atmosphere promoted fabrication of graphene oxide nanoparticle by agricultural waste**

 **UV-VISIBLE SPECTROSCOPY**



**SF 1: 6 UV-Visible graph of as synthesized a) graphite b) OPGO c) RBGO d) SBGO e) TAWGO.**

OPGO attribute to the peak around 270nm, and rice bran synthesize GO is attributed the peak at 240 nm due to π-π\* transition. SBGO is peak obtained around 266 nm and TAGO shows a maximum absorption peak at 236 nm due to π-π\* transition of the aromatic C-C bond and weak shoulder peak is obtained at 255 nm due to n-π\* transition of C=O bonds [1].

d- spacing of GO is also calculate by different types of agro waste by HRTEM images, which shows in a supporting table 1

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| **S. no.**  |  **GO obtained via different agro wastes** |  **d- spacing (nm)** |
| 1. | Orange peel synthesized GO (OPGO) |  1.24- 2.01 |
| 2. | Rice bran synthesized GO (RBGO) |  1.41-2.15 |
| 3. | Sugercane bagasse synthesized GO (SBGO)  |  1.49- 2.30 |
| 4. | Tricomposite agro waste synthesized GO (TAWGO) |  1.04-1.49 |

**References**

Li, D.; Muller, M. B.; Gilje, S.; Kaner, R. B.; Wallace, G. G. 2008 Processable aqueous dispersions of graphene nanosheets. *Nat. Nanotechnol*, 3, 101−105.